

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 08/426,509

1/26

```

CTCGCTCCAAGTTGCGACGGGGACCCCTCGGGTGTGCAGCCGCTCCGGAGGCCCTCTGGGGGGGGGGGGGGCTCGGGG 90
GCCCCCCCCTGACCAAGAAAACAGGAAGAACCGAGGCTCGTCCAGTGGCACCCAGCTCCCTACCTCTGTGCCAGCCGCTGGCTGTGGCA 180
GGCCATTCCCAGGTCCCCACTGTACCACTTGCTAGTGTCCCTCACCTGCCTAGTTCCCTCTGGGGGGGATGGGGGGGGAG 270

```

M A G R

Sno

GCTCTCTGTTCTGGCGCCATTACGGCTGTGATTCTGCTGAGGAATTCCCCCGTGACCCCCCGCTCCCTCCGACCTGGCACC 360  
G S L V S W R A F H G C D S A E E L P R V S P R E I R A W H

Small

CCCCCTCCCTCTCAGCCAGATGCCAACGAGGCCCTGGGCCCCGGCACCCAGTCTATCACCAAATCCGACCAACCCCCCCCCAAGCCAG 450  
P P P V S A R M P T R R W A P G T Q C I T K C E H T R P K P

Stu

Konj

GGGAGCTGCCCTCCGCAAGGGCCACCTCGTACCATCCTGGAGGCCGCCAGAACAGACCTCGTACCCCGTCAACCACCAACAGTG 540 SH 3  
G E L A F R K G D V V T I L E A C E N K S W Y R V K H T S

Pyu II

GACAGGAGGGCTGCTGGCAGCTGGGGGCTGGGGAGCCCCCTCCGCAGACCCCAACCTCAGCCTCATGCCCTGGTTCACG 630  
G Q E G L L A A G A L R E R E A L S A D P K L S L M P , W F H

### Pvull Pst 1

CGAACATCTCCCCCAGCACCTGTCACCAAGCTGCAGCCTCCGACCATGGCTCTTCTGGTCCCCAGTCCGGCGCCACCCGGCC 720  
G K I S G Q E A V Q Q L Q P P E D G L F I V R E S A R H P G SH 2

C1a1

ACTACCTCTCTGCCGTACCTTGGCCCCACCTCATCCACTACCCGCTGCTCCACCCCCACCTCACAAATCCATGAGGCCCTGT 810  
D Y V L C V S F G R D V I H Y R V L H R D G H L T I D E A V

TCTTCTGCAACCTCATGGACATGGTGGACATTACACCAAGGACAAGGGCCATTCTGCACCAACCTGGTCAAGACCAAACCGAAACCG 900  
F F C N L M D M V E H Y S K D K G A I C T K L V R P K R K H

FIG. 1A

FIG. 1B

CACGTCCCCCACGCTCCGTCTCACGGCAGGACGCCGACCCCTCCACCTCCACCCGAAAGCCAGGAGCCCTGACCCCAACCCCTGGGCCCT 1800  
A G A P A S V S G Q D A D G S T S P R S Q E P  
  
TCCCCCCCACAGCAGCCAGAGACTGGAGACTCCGCCCCCTGGGGGACTGACCAACCCCAAGGAGGGTCCACCCCCGAACTCATCTCCCTGG 1890  
  
TCCCCACAGCAGGGCTGGCCACCTAGGGGCTCTGGGGGGGGCTGGACACCCCCAGACCTGGCAACCATGATGGGGATAAACACCC 1980  
  
ATTCTAAGGACTCTAAAAAA 2000

FIG.1C

CCCTTTGCTTAGAGCTGAGACTCAAAG AGGACCCACATGATACTTCGGCTACCCAGT AGGATGATAATGATACA 90  
M D T

AAATCTATTCACAACAATTCTCTCAAACATCACACCAAAACAAACAAATCTCACCAAATAATTACAACAAACCCCTTTCTTTC 180  
K S I L E E L L L K R S Q Q K K K M S P N N Y K E R L F V L

ACCAAAACAAACCTTCCTACTATGAATATCACAAATGAAAAGGGACCCAGAAAAGGATCCATTGAAATTAAAGAAATCAGATGTC 270  
T K T N L S Y Y E Y D K M K R G S R K G S I E I K K I R C V

GAGAAACTAAATCTGAGGAGCACCCCTGAGAGAGACTACCCATTTCAGATTGTCTATAAACATCCCTTCATGCTATGCA 360  
E K V N L E E Q T P V E R Q Y P F Q I V Y K D G L L Y V Y A PH

TCAATGAAGAGACCCGAACTCACTTCCTCAAACCAATTACAAAAGACATAACCCGTAACCCCCACCTGCTGCTCAACTACCATAGCC 450  
S N E E S R S Q W L K A L O K E I R G N P H L L V K Y H S C

TTCTTCTGACCCGAACTTCCTCTTCCACCCAGCTGTAACCCAGCCACCGATGACCCCTCTGGAAACCATATGCTAACTCCAT 540  
F F V D G K F L C C Q Q S C K A A P G C T L W E A Y A N L H

ACTGGACTCAATGAAGAGAAACACAGACTTCACCTTCACAGACTTCCTGAGACAGACTTCCTGAAACATACCTCCGGAGCTTCCTGTTCTCAAATGCCAT 630  
T A V N E E K H R V P T F P D R V L K I P R A V P V L K M D

GCACCATCTCAACTACCACTCTACCCAAATGACAACGAATCAAAGAAAATATGCCCTCCAGCCACCATCTCAACTACCACTCTA 720  
A P S S S T T L A Q Y D N E S K K N Y C S Q P P S S T S L SH3

CCCAATATGACACCAACTCAAAGAAAATCTATGCCCTCCAGCCAAACTCAACATGCACTATATTCCAACGGAAAGACTTCCTGACTGG 810  
A Q Y D S N S K K I Y C S Q P N F N M Q Y I P R E D F P D W

TCCCAACTAAAGAAAATCTAAAGACTTACCCGACCAACTGAAAGATGTTGCAACCAACTAAACCAAAAGAAAGAAATGCAATCACACCCCTCA 900  
W Q V R K L K S S S S E D V A S S N Q K E R N V N H T T S

AAGATTTCATGCCATTCCCTGACTCAACTCATCTCAAGAACGGAAAACCTGGATGATTGACTGCTTCCTGCTAACATCCAGA 990  
K I S W E F P E S S S S E E E E N L D D Y D W F A G N I S R

TCACAACTCAACAGTTACTCACACAAAGGAAAAGAGGAGCTTATGCTAGAAATTGAGCCAAAGTGGAAATCTACACACTGTC 1080  
S Q S E Q L L R Q K C K E C A F M V R N S S Q V G M Y T V S SH4

TTATTTACTAACCTGTAATGATAAAAAGGAACTGCAAACATTACCAAGCTGCTACAAATCTGAGAACAAATTACCTGGACAA 1170  
L F S K A V N D K K G T V K H Y H V H T N A E N K L Y L A E

FIG.2A

5/26

AACTACTGTTTATTCATTCAAACCTTATTCAATTATCATCAACACAATTCAACAGGCATGATCACACCCCTCCGCACCCCTGCTCA 1260  
N Y C F D S I P K L I H Y H Q H N S A G M I T R L R H P V S  
ACAAACGCCAACACGCTCCCCACTCTGTCCTCCGAATCGAATCTGCAACTGAAAGAGAAGAGATTACCTGCTCAACGCCCTGCTCA 1350  
T K A N K V P D S V S L G N G I W E L K R E E I T L L K E L  
CGAAGTCGCCAGTTGCACTGCTCACCTGCCAAGTGCACGGCCACTATGATCTGCTTAACATGATCAACGCCCTCCATGCTCA 1440  
G S G Q F G V V Q L G K W K G Q Y D V A V K M I K E G S M S  
CAACATCAATTCTTCAGGACCCCCACACTATGATGAAACTCACCCATCCAACCTCGTTAAATTCTATGCAAGTGTGCTCAAGGAATAC 1530  
E D E F F Q E A Q T M M K L S H P K L V K F Y G V C S K E Y  
CCCATATACATACTGACTGAATATAACCAATGGCTCTCTCAATTACCTGAGGACTACGGAAAAGGACTGCAACCTTCCACCTC 1620 TK  
P I Y I V T E Y I S N C C L L N Y L R S H G K C L E P S Q L  
TTAGAAATCTGCTACCATGTCGTGAAGGCATGGCTTCTTGAGACTACCAATTCTACACCCGACTTGGCTGCTTAACCTCTG 1710  
L E M C Y D V C E G M A F L E S H Q F I H R D L A A R N C L  
CTGGCACACATCTGTCGAACATCTGACTTCAATGCAACGATGCAACCTATCTGCTGACCAATTCTACACCCGACTTGGCTGCTTAACCTCTG 1800  
V D R D L C V K V S D F G M T R Y V L D D Q Y V S S V G T K  
TTTCCAGTCAGCTCACGCTCCAGGCTTCTTCAATTACTCTCAAAATACACCAACTCACACCTATGCCATTGGATGCTGATGCG 1890  
F P V K W S A P E V F H Y F K Y S S K S D V W A F G I L M W  
CAGCTGTCAGGCTGGGAAGCAGCCCTATGACTCTGACTGAAACTCCACGCTCTGCAACCTCTCCAGGCCACGGCTTACCC 1980  
E V F S L G K Q P Y D L Y D N S Q V V L K V S Q G H R L Y R  
CCCCACCTGCCATGGACACCATCTACCAAGATCATGTCAGCTGGCACCCATGCCACAAACCTCTCCACATTCAACACTCTG 2070  
P H L A S D T I Y Q I M Y S C W H E L P E K R P T F Q Q L L  
TCTTCATTGAAACACTCCGAAAAAGACAAGCATGAAAGAAATTGACTGCTGATAAGAATGAATATAGATGCTGCCAGCATT 2160  
S S I E P L R E K D K H .  
TTCACTCATTTAACGAAACTACCAACCCATAATGTAATTACTACTTTTAATACTGTCCTCTGCTATTCTATTATTAAGAAATGAA 2250  
CAAGCCACAAACAAAGATCCCTGAAATTAGCTCAATTACTAATTCTGTTAGCTGCCCTGATATAACACTTCCACCCCTATA 2340  
GCAGAACCACTTCAAGACTCAATATAGAGACTGCTGCTGAAAGACTGACCAACTGAAAATTACTTATCCATATTCTT 2430  
CTTTCTTATATTGTCATGTCACAAACATTAAATACTACCAACTACAAAAA 2500

FIG.2B

6/26

CCGGACTGGTCAAAGACAGAACACTGAAACAGGGGACAGCTCTGGAAACCAAGACGCTGACCTTTACCAAGGATAAACAC 90  
AAAACACACCTTCTACTGACCAAGCTGCCAGCTCTCTGACTTTGCTCCGGTACCACTCCAGCCACAGAAACCAACCCGTAAC 180  
TCTCTCCAGGTAGGACTTGTGCAACCCAGCTGCTGGACTGATCTGAAACGGGACTTTGATCTCTCCAACTATCGTCACTTCTGCT 270  
M V S W C  
CACTTCAAAGTGGCTCGTCAACCAAGATAACGTCGATCCCACAGACTAACGGGAGACGGAGAAGCCCTGCTCTCTCCCCACCAAG 360  
GCACAAATGACCAACATCTGTCACACCCCTGCGACTACCTAGAACCTATCTCCCTGTTGTCACGGAGGGAGAACACTAACCGTCA 450  
M S N I C Q R L W E Y L E P Y L P C L S T E A D K S T V  
TTGAAAATCCAGGGCCCTTGTCTCTCCCACTCACAGACCCATGCCACTACTTTGCTGCTTCTTCAATACCAAGGCTGGACTGCTG 540  
I E N P G A L C S P Q S Q R H G H Y F V A L F D Y Q A R T A  
ACGACTTGACCTCCACCAACTAACGCTATATTCTCTAACTACCTGCTGACACTTGCAACGGCTGCTGCTGCAACACTTGGAGAAAGAC 630 SH 3  
E D L S F R A G D K L Q V L D T L H E G W W F A R H L E K R  
CAGATGGCTCCACTCAGCAACTAACGCTATATTCTCTAACTACCTGCTGACGGACAGAACCTAACGGCACAGCCGTGGTCTTG 720  
R D G S S Q O L Q G Y I P S N Y V A E D R S L Q A E P W F F  
GACCAATCGGAAGATCAGATGCCAGAACAAACTATTATATTACAAAAGACCCCTCTTCTAATCAGAGAAACTGAAACCCAA 810 SH 2  
G A I G R S D A E K O L L Y S E N K T G S F L I R E S E S O  
AACGACAATTCTCTTCAACTGACCAATTGAGCCACTCTAAACACTACAGAATTAAAGACTGCAACCCGATTTTCTCACCG 900  
K G E F S L S V L D G A V V K H Y R I K R L D E G G F F L T  
GAAGAAGAATCTTCAACACTGACCAATTGAGCCACTACACCAAGAACGTCACCCCTGCTGCTAACCTGGAAACCATGCT 990  
R R R I F S T L N E F V S H Y T K T S D G L C V K L G K P C  
TAAAGATCCAGTCCCAAGCTCCATTGATTTCTCTATAAAACCTGCCAACATCCGACATACACCCCAACTCCATACAGCTCTGAGC 1080  
L K I Q V P A P F D L S Y K T V D Q W E I D R N S I Q L L K  
CATGGATCTCTCACTTCCCAACTATGCAACGTCACCAAGAACATACCAACTCCACTACAGCTAACACATTAAACCACTTCAA 1170  
R L G S G Q F G E V W E G L W N N T T P V A V K T L K P G S  
TCCATCCAAATGACTTCTGAGGGACCCACAGATAATGAGAACCTAACACATCCAAACCTTATCCACCTTATGCTCTTGCACCTAG 1260  
M D P N D F L R E A Q I M K N L R H P K L I Q L Y A V C T L

FIG.3A

7/26

		<u>MKK1</u>	<u>MKK2</u>
HUMAN			
MEG/ERYTH	MEG-01	+++	+++
	K562	++	+
	M07E	++	+
	HEL	+++	++
MYELO/MAC	KC-1	+	++
	HL-60	+	+
	TF-1	+	+
B-CELL	ALL-1	-	+
	RAJI	-	-
	DAUDI	-	-
T-CELL	MOLT-3	-	-
	JURKAT	-	-
EPITHELIAL	HELA	-	-
RODENT			
	BM	+	+++
	SPLEEN	+++	+
	THYMUS	-	-
	LIVER	-	-
	BRAIN	+	-
RAT NEURAL	P19	+	-

FIG.4

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 08/426,509

8/26

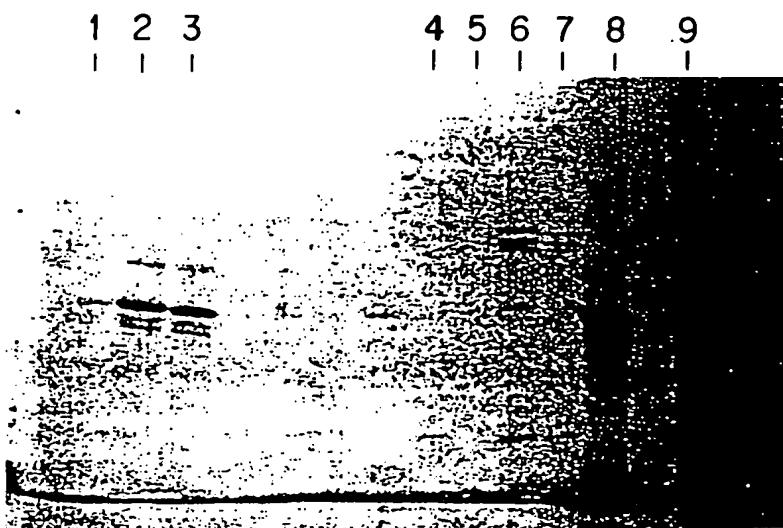


FIG. 5

9/26

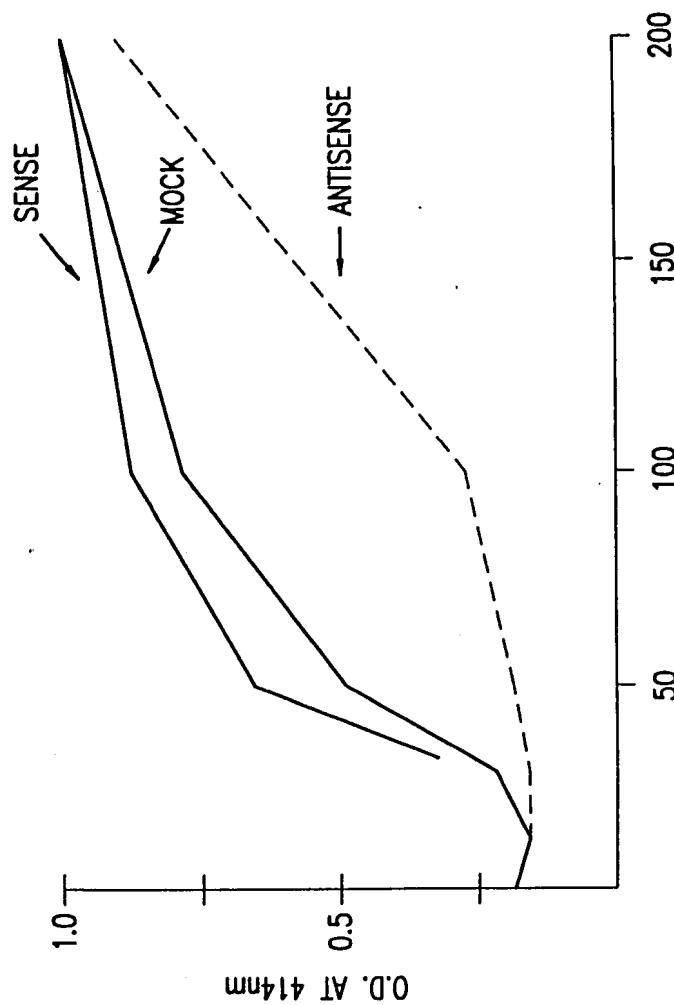


FIG.6A

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 08/426,509

10/26

MKKI PROTEIN EXPRESSION

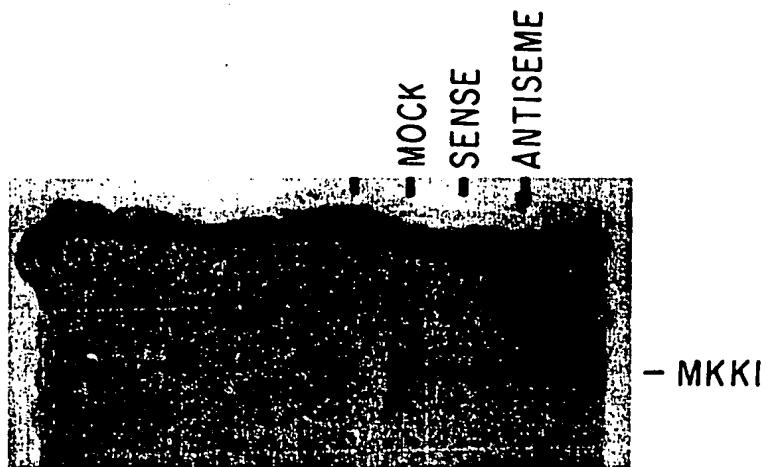


FIG. 6B

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 08/426,509

11/26

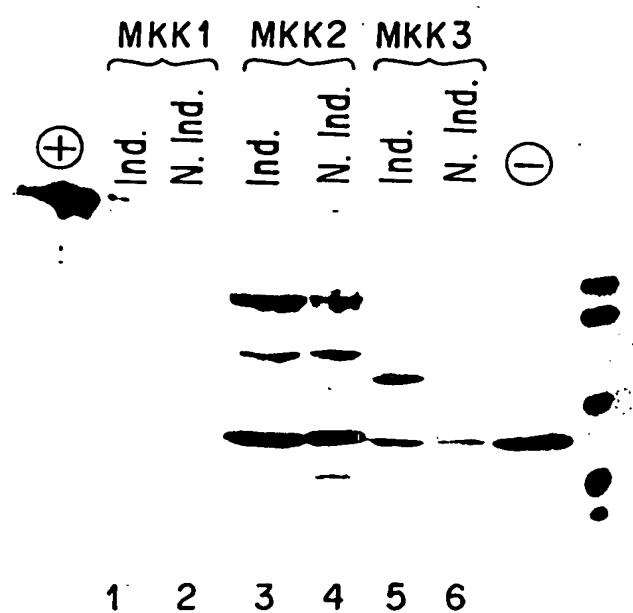


FIG. 7

12/26

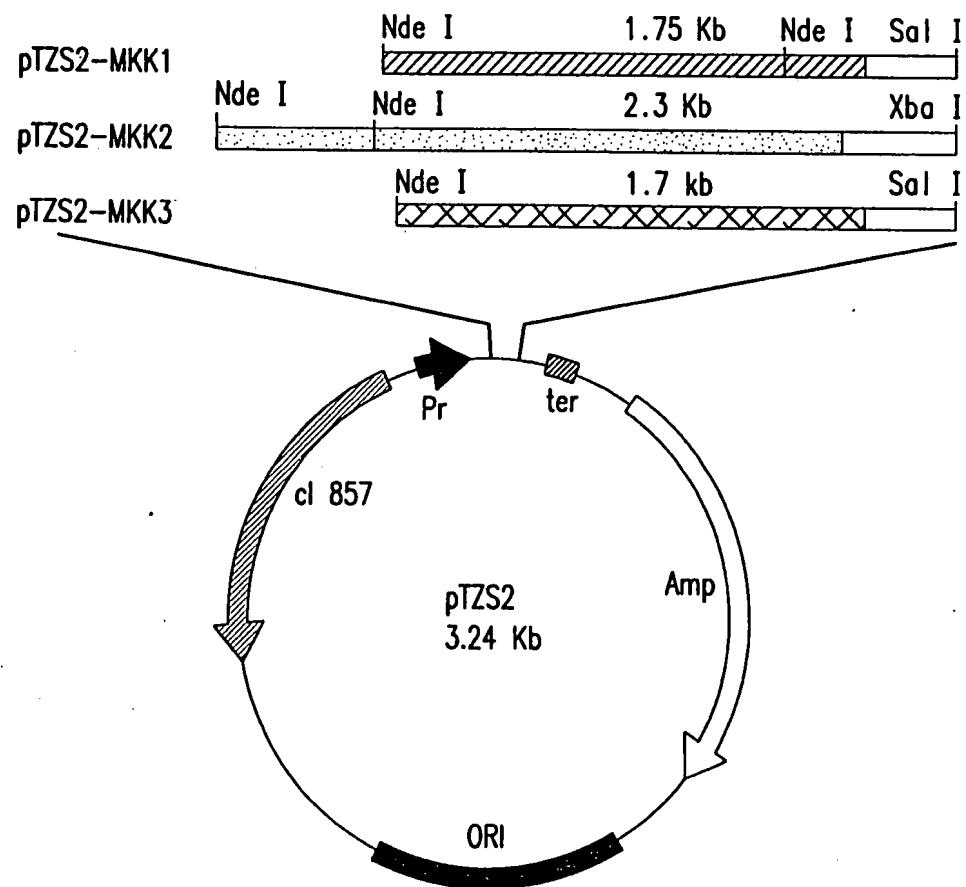


FIG.8

1	M A G R G S L V S W R A F H G C D S A E E L P R V S P R F L	MKK1 aa
1	M S A I Q A A - - - - -	hCSK (JH0559)
31	R A W H P P P V S A R M P T R R W A P G T O C I T K C E H T	MKK1 aa
8	- - - - - W P S G T E C I A K Y N F H	hCSK (JH0559)
61	R P K P G E L A F R K G D V V T I L E A C E N K S W Y R V K	MKK1 aa
22	G T A E Q D L P F C K G D V L T I V A V T K D P N W Y K A K	hCSK (JH0559)
91	H H T S C Q E C L L A A G A L R E R E A L S A D P K L S L M	MKK1 aa
52	N K V - G R E G I I P A N Y V Q K R E G V K A G T K L S L M	hCSK (JH0559)
121	P W F H G K I S G Q E A V Q Q L Q O P P E D G L F L V R E S A	MKK1 aa
81	P W F H G K I T R E Q A E R L L Y P P E T G L F L V R E S T	hCSK (JH0559)
151	R H P G D Y V I C V S F G R D V I H Y R V L H R D G H L T I	MKK1 aa
111	N Y P C D Y T L C V S C D G K V E H Y R I M Y H A S K L S I	hCSK (JH0559)
181	D E A V F F C N L M D M V E H Y S K D K G A I C T K L V R P	MKK1 aa
141	D E E V Y F E N L M Q L V E H Y T S D A D G L C T R L I K P	hCSK (JH0559)
211	K R K H G T K S A E E E L A R A G W L L N L Q H L T L G A Q	MKK1 aa
171	K V M E G T V A I A Q D E F Y R S G W A L N M K E L K U L Q T	hCSK (JH0559)
241	I G E G E F G A V L Q G E Y L G Q K V A V K N I K C D V T A	MKK1 aa
201	I G K G E F G D V M L G D Y R G N K V A V K C I K N D A T A	hCSK (JH0559)
271	Q A F L D E T A V M T K M Q H E N L V R L L G V I L H Q - -	MKK1 aa
231	Q A F L A E A S V M T Q L R H S N L V Q L L G V I V E E K G	hCSK (JH0559)
299	G L Y I V M E H V S K G N L V N F L R T R G R A L V N T A Q	MKK1 aa
261	G L Y I V T E Y M A K G S L V D Y L R S R G R S V L G G D C	hCSK (JH0559)
329	L L Q F S L H V A E G M E Y L E S K K L V H R D L A A R N I	MKK1 aa
291	L L K F S L D V C E A M E Y L E G N N F V H R D L A A R N V	hCSK (JH0559)
359	L V S E D L V A K V S D F G L A K A E R K G L D S S R L P V	MKK1 aa
321	L V S E D N V A K V S D F G L T K E A S S T Q D T G K L P V	hCSK (JH0559)

FIG.9A

14/26

389 K W T A P E A L K H G K F T S K S D V W S F G V L L W E V F MKK1 aa  
351 K W T A P E A L R E K K F S T K S D V W S F G I L L W E I Y hCSK (JH0559)

419 S Y G R A P Y P K M S L K E V S E A V E K G Y R M E P P E G MKK1 aa  
381 S F G R V P Y P R I P L K D V V P R V E K G Y K M D A P D G hCSK (JH0559)

449 C P G P V H V L M S S C W E A E P A R R P P F R K L A E K L MKK1 aa  
411 C P P A V Y E V M K N C W H L D A A M R P S F L Q L R E Q L hCSK (JH0559)

479 A R E L R S A G A P A S V S C Q D A D G S T S P R S Q E P MKK1 aa  
441 E H - - - - - I K T H E L H - - - - - L hCSK (JH0559)

FIG.9B

1	[M]DTKS[ILEEL[LLKRSQQKKK[MSPN[NYKE[RL	MKK2 aa
1	[MAA-VILE[ESIFL[KRSQQKKK[TSP[LNFK[KRL	hAkt (X58957)
1	[MNNF[IL[LEE[QLT[KKSQQK[RRT[SPS[NFK[VRF	hTKT (L10717)
1	[MMV-----	mTec (X5663)
31	[FVLTKTNL[SYYE--YDKMKRGS[R[KGSIE[IK	MKK2 aa
30	[FLLT[VHKL[SYYEYDFER[GRRGSKKGSID[VE	hAkt (X58957)
31	[FVLTKAS[LAYFE[DR--H[GKKRTL[KGSIELS	hTKT (L10717)
4	-----	mTec (X5663)
59	[KIR[RCVE[KVNLE[EQT[PVERQ-----	MKK2 aa
60	[KIT[CVET[VVP[EKNPPPERQI[P[RGEESSEM	hAkt (X58957)
59	[RIK[CVIE[VKSD-----	hTKT (L10717)
4	-----	mTec (X5663)
78	-----[YPFQ[IVYKDG[LLYVYASNE[E	MKK2 aa
90	[EQ[ISI[IERFP[YPFQV[VYDE[GPLYVFSPT[EE	hAkt (X58957)
70	[ISI[PCHYK[YPFQV[VH[DNYLLYVFA[PDRE	hTKT (L10717)
4	-----[SF[PVKINFHSSP-----Q	mTec (X5663)
98	[SRSQ[WL[KALQ[K[EIR[G[N[P[H[LL[V[KYH[SG[F[F[V[D	MKK2 aa
120	[LRK[RWI[HQL[KN[VIRY[N[SD[L[V[Q[KYH[P[C[F[W[D	hAkt (X58957)
98	[SRQ[RWV[LA[LKE[E[TRNN[NS[L[V[PKYH[P[N[F[W[M[D	hTKT (L10717)
17	[SRD[RWV[K[KLKE[E[I[KNN[N[IMIKYH[P[KF[W[A[D	mTec (X5663)
128	[GKF[FLCC[Q[OS[CKA[AP[GCT[TLW[E[A[YA[N[L[H[T[A[V[N	MKK2 aa
150	[GQY[LC[CS[Q[TA[KN[AM[G[G[Q[ILE[N[R[N[G[SL[K[P[G[S	hAkt (X58957)
128	[GKWR[CC[CS[Q[LE[KL[A[T[GCA[Q[YD-----P	hTKT (L10717)
47	[GSY[Q[CC[Q[TE[KL[A[P[GCE[K[YN[L[F[E[SS[I-----	mTec (X5663)
158	E[E[KH[R[V[P[F[P[D[R[V[L[K[I[P[R[A[V[P[V[L[KMDA[P[S[S	MKK2 aa
180	S[SH[R[K[T[KP[L[P[P-----[T[P[E[E[D[Q[I[L[KK[P[L[P[P[E	hAkt (X58957)
149	T[TKN[A[S[K[KP[L[P[P-----[T[P[E[D[N[R-----	hTKT (L10717)
73	-----[R[KT[L[P[P-----[A[P[E-----[I[K[KR[R[P[P]-	mTec (X5663)
188	S[TT[L[A[Q[YD[N[E[S[K[K[N[Y[G[S[Q[P[P[S[S[S[T[S[L[A[Q[YD	MKK2 aa
206	[P[P[A[A[P[V[S[T[SE[L[K[K-----[V[V[A[L[YD	hAkt (X58957)
166	-----[R[P[L[W[E[P[E[E[T[V-----[V[V[A[L[YD	hTKT (L10717)
89	[P[P[I[P[P[E[E[N[T[E[I-----[V[V[A[M[YD	mTec (X5663)

FIG.10A

218 S N S K K I Y G S [Q P N F N M Q Y I P R E D F P - D W W Q V	MKK2 aa
225 Y M P M N A N D L Q L R K G D E Y F I L E E S N L P W W R A	hAkt (X58957)
182 Y Q T N D P Q E L A L R R N E E Y C L L D S S E I H W W R V	hTKT (L10717)
108 F Q A T E A H D L R L E R G Q E Y I I L E K N D L H W W R A	mTec (X5663)
247 R K L K S S S S S E D V A S S N Q K E R N V N H T T S K I S	MKK2 aa
255 R D - - K N G Q E G Y I P S N Y V T E - A - - - - -	hAkt (X58957)
212 Q D - - R N G H E G Y V P S S Y L V E K S - - - - -	hTKT (L10717)
138 R D - - K - - - - -	mTec (X5663)
277 W E F P E S S S S E E E N L D D Y D W F A G N I S R S Q S	MKK2 aa
273 - - - - - E D S I E M Y E W Y S K H M T R S Q A	hAkt (X58957)
231 - - - - - P N N L E T Y E W Y N K S I S R D K A	hTKT (L10717)
141 - - - - - Y G W Y C R N T N R S K A	mTec (X5663)
307 E Q L L R Q K G K E G A F M V R N M S S Q V C M Y T V S L F S	MKK2 aa
292 E Q L L K Q E G K E G G F I V R D S S K A G K Y T V S V F A	hAkt (X58957)
250 E K L L L D T G K E G A F M V R D S R T A G T Y T V S V F T	hTKT (L10717)
154 E Q L L R T E D K E G G F M V R D S S Q P G L Y T V S L Y T	mTec (X5663)
337 K - A V N D K K G T V K H Y H V H - - T N A E N K L Y L A E	MKK2 aa
322 K S T - G D P Q G V I R H Y V V - - C S T P Q S Q Y Y L A E	hAkt (X58957)
280 K A V V S E N N P C I K H Y H I K E T N D N P K R Y Y V A E	hTKT (L10717)
184 K F G - G E G S S G F R H Y H I K E T A T S P K K Y Y L A E	mTec (X5663)
364 N Y C F D S I P K L I H Y H Q H N S A G M I T R L R H P V S	MKK3 aa
349 K H L F S T I P E L I N Y H Q H N S A G L I S R L K Y P V S	hAkt (X58957)
310 K Y V F D S I P L L I N Y H Q H N G G G L V T R L R Y P V C	hTKT (L10717)
213 K H A F G S I P E T I E Y H K H N A A G L V T R L R Y P V S	mTec (X5663)
394 T K A N K V P D S V S L C N G I W E L K R E E I T L K E L	MKK2 aa
379 Q Q N K N A P S T A G L G Y G S W E I D P K D L T F L K E L	hAkt (X58957)
340 F G R Q K A P V T A G L R Y G K W V I D P S E L T F V Q E I	hTKT (L10717)
243 T K G K N A P T T A G F S Y D K W E I N P S E L T F M R E L	mTec (X5663)
424 G S G Q F G V V Q L G K W K G Q Y D V A V K M I K E G S M S	MKK2 aa
409 G T G Q F G V V K Y G K W R G Q Y D V A I K M I K E G S M S	hAkt (X58957)
370 G S G Q F G L V H L G Y W L N K D K V A I K T I R E G A M S	hTKT (L10717)
273 G S G L F G V V R L G K W R A Q Y K V A I K A I R E G A M C	mTec (X5663)

FIG.10B

454	E D E F F Q E A Q T M M K L S H P K L V K F Y G V C S K E Y	MKK2 aa
439	E D E F I E E A K V M M N L S H E K L V Q L Y G V C T K Q R	hAtk (X58957)
400	E E D F I E E A E V M M K L S H P K L V Q L Y G V C L E Q A	hTKT (L10717)
303	E E D F I E E A K V M M K L T H P K L V Q L Y G V C T Q Q K	mTec (X5663)
484	P I Y I V T E Y I S N G C L L N Y L R S H G K G L E P S Q L	MKK2 aa
469	P I F I I T E Y M A N G C L L N Y L R E M R H R F Q T Q Q L	hAtk (X58957)
430	P I C L V F E F M E H G C L S D O Y L R T Q R G L F A A E T L	hTKT (L10717)
333	P I Y I V T E F M E R G C L L N F L R Q R Q G H F S R D M L	mTec (X5663)
514	L E M C Y D V C E G M A F L E S H Q F I H R D L A A R N C L	MKK2 aa
499	L E M C K D V C E A M E Y L E S K Q F L H R D L A A R N C L	hAtk (X58957)
460	L G M C L D V C E G M A Y L E E A C V I H R D L A A R N C L	hTKT (L10717)
363	L S M C Q D V C E G M E Y L E R N S F I H R D L A A R N C L	mTec (X5663)
544	V D R D L C V K V S D F G M T R Y V L D D Q Y V S S V G T K	MKK2 aa
529	V N D Q G V V K V S D F G L S R Y V L D D E Y T S S V G S K	hAtk (X58957)
490	V G E N Q V I K V S D F G M T R F V L D D Q Y T S S T G T K	hTKT (L10717)
393	V N E A G V V K V S D F G M A R Y V L D D Q Y T S S S G A K	mTec (X5663)
574	F P V K W S A P E V F H Y F K Y S S K S D V W A F G I L M W	MKK2 aa
559	F P V R W S P P E V L M Y S K F S S K S D I W A F G V L M W	hAtk (X58957)
520	F P V K W A S P E V F S F S R Y S S K S D V W S F G V L M W	hTKT (L10717)
423	F P V K W C P P E V F N Y S R F S S K S D V W S F G V L M W	mTec (X5663)
604	E V F S L G K Q P Y D L Y D N S Q V V L K V S Q G H R L Y R	MKK2 aa
589	E I Y S L G K M P Y E R F T N S E T A E H I A Q G L R L Y R	hAtk (X58957)
550	E V F S E G K I P Y E N R S N S E V V E D I S T C F R L Y K	hTKT (L10717)
453	E T F T E G R M P F E K N T N Y E V V T M V T R G H R L H R	mTec (X5663)
634	P H L A S D T I Y Q I M Y S C W H E L P E K R P T F Q Q L L	MKK2 aa
619	P H L A S E K V Y T I M Y S C W H E K A D E R P T F K I L L	hAtk (X58957)
580	P R L A S T H V Y Q I M N H C W K E R P E D R P A F S R L L	hTKT (L10717)
483	P K L A T K Y L Y E V M L R C W Q E R P E G R P S F E D L L	mTec (X5663)
664	S S I E P L R E K D K H	MKK2 aa
649	S N I L D V M D E E S	hAtk (X58957)
610	R Q L A E I A E S - - - G L	hTKT (L10717)
513	R T I D E L V E C E E T F G R	mTec (X5663)

FIG.10C

1	M S N I C Q R L W E	-----	MKK3	MP1	aa
1	M G C V Q C K D K E A T	-----	hFyn		
1	M G C V H C K E K I S C	-----	cYrk		
1	M G S N K S K P K D A S Q R R R S L E P A E N V H G A	-----	hSrc		
1	M G C I K S K E N K S P A I K Y R P E N T P E P V S T	-----	hYes		
1	M G C V F C K K L E P V A T A K E D A G L E G D F R S Y G	-----	hFgr		
1	M G C I K S K G K D S L S D D C V D L K T Q P V R N T E R	-----	hLyn		
1	M G S M K S K F L Q V G G N T F S K T E T S A S P H C	-----	hHck		
1	M G C G C S S H P E D D W M E N I D V C E N C H Y	-----	hLck		
1	M G L L S S K R Q V S E K G K G W S P V K I R T Q D K A P P	-----	mBik		
11	-----	-----	MKK3	MP1	aa
26	S G Y R Y G T D P T P Q H Y P S F G V T S I P N Y N N F	-----	hFyn		
26	P P S O Y D P D P T Q L S G A F T H I P D F N N F	-----	cYrk		
28	G G G A F P A S Q T P S K P A S A D G H R C P S A A F A P A	-----	hSrc		
28	S V S H Y G A E P T T V S P C P S S S A K G T A V N F S S L	-----	hYes		
30	A A D H Y G P D P T K A R P A S S F A H I P N Y S N F	-----	hFgr		
30	T I I Y V R D P T S N K Q Q R P V P E S Q L L P G Q R F Q T K	-----	hLyn		
28	P V Y V P D P T S T I K P G P N S H N S N T P C I R	-----	hHck		
26	P I V P L D G K G I L L I R N G S E V R D P L V T Y E G S	-----	hLck		
31	P L P P L V V V F N H L A P P S P N Q	-----	mBik		
15	Y L P C L S T E A D K S T V I E N P G A L C S P Q S Q R H G	-----	MKK3	MP1	aa
54	H A A G G Q G L T V F G G V N S S S H T G T L R T	-----	hFyn		
51	H A A A V S P P V P F S G P G F Y P C N T L Q A H S S	-----	cYrk		
58	A A E P K L F G G F N S S D T V T S P Q R A G	-----	hSrc		
58	S M T P F G G S S G V T P F G G A S S S F S V V P S S Y P A	-----	hYes		
57	S S Q A I N P G F L D S G T I R G	-----	hFgr		
60	D P E E Q G	-----	hLyn		
54	E A G S E D	-----	hHck		
55	N P P A S P L Q D	-----	hLck		
49	D P D E E E	-----	mBik		
45	H Y F V A L F D Y Q A R T A E D L S F R A G D K	-----	MKK3	MP1	aa
79	R G G T G V T L F V A L Y D Y E A R T E D D L S F H K G E K	-----	hFyn		
78	I T G G G V T L F I A L Y D Y E A R T E D D L S F Q K G E K	-----	cYrk		
81	P L A G G V T T F V A L Y D Y E S R T E T D L S F K K G E R	-----	hSrc		
88	G L T G G V T I F V A L Y D Y E A R T T E D D L S F K K G E R	-----	hYes		
74	V S C I G V T L F I A L Y D Y E A R T E D D L T F T K G E K	-----	hFgr		
66	----- D I V V A L Y P Y D G I H P D D L S F K K G E K	-----	hLyn		
60	----- I I V V A L Y D Y E A I H H E D D L S F Q K G D Q	-----	hHck		
64	----- N L V I A L H S Y E P S H D G D L G F E K G E Q	-----	hLck		
55	----- R F V V A L F D Y A A V N D R D L Q V L K G E K	-----	mBik		

FIG.11A

19/26

69	L Q V L D T L H E G W W F A R H L E K R R D G S S Q Q L Q G	MKK3 MPI aa
109	F Q I L N S S E G D W W E A R S L T G E T G	hFyn
108	F H I I N N T E G D W W E A R S L S S G A T G	cYrk
111	L Q I V N N T E G D W W L A H S L S T G Q T G	hSrc
118	F Q I I N N T E G D W W E A R S L A T G K N G	hYes
104	F H I I L N N T E G D W W E A R S L S S G K T G	hFgr
90	M K V L E E H - G E W W K A K S S L L T K K E G	hLyn
84	M V V L E E S - G E W W K A R S S L A T R K E G	hHck
88	L R I L E Q S - G E W W K A Q S S L T T G Q E G	hLck
79	L Q V L R S T - G D W W L A R S S L V T G R E G	mBik
99	Y I P S N Y V A E D R S L Q A E P W F F G A I G R S D A E K	MKK3 MPI aa
132	Y I P S N Y V A P V D S I Q A E E W Y F G K L G R K D A E R	hFyn
131	Y I P S N Y V A P V D S I Q A E E W Y F G K I G R K D A E R	cYrk
134	Y I P S N Y V A P S D S I Q A E E W Y F G K I T R E S E R	hSrc
141	Y I P S N Y V A P A D S I Q A E E W Y F G K M G R K D A E R	hYes
127	C I P S N Y V A P V D S I Q A E E W Y F G K I G R K D A E R	hFgr
112	F I P S N Y V A K L N T L E T E E W F F K D I T R K D A E R	hLyn
106	Y I P S N Y V A R V D S L E T E E W F F K G I S R K D A E R	hHck
110	F I P P N F V A K A N S L E P E P W F F K N L S R K D A E R	hLck
101	Y V P S N F V A P V E T L E V E K W F F R T I S R K D A E R	mBik
129	Q L L Y S E N K T G S F L I R E S E S Q K G E F S L S V L D	MKK3 MPI aa
162	Q L L S F G N P R G T F L I R E S E T T K G A Y S L S I R D	hFyn
161	Q L L C H G N C R G T F L I R E S E T T K G A Y S L S I R D	cYrk
164	L L L N A E N P R G T F L V R E S E T T K G A Y C L S V S D	hSrc
171	L L L N P G N Q R G I F L V R E S E T T K G A Y S L S I R D	hYes
157	Q L L S P G N P Q G A F L I R E S E T T K G A Y S L S I R D	hLyn
142	Q L L A P G N S A G A F L I R E S E T L K G S F S L S V R D	hHck
136	Q L L A P G N M L G S F M I R D S E T T K G S Y S L S V R D	hHck
140	Q L L A P G N T H G S F L I R E S E S T A G S F S L S V R D	hLck
131	Q L L A P M N K A G S F L I R E S E S N K G A F S L S V K D	mBik
159	- - - - G A V V K H Y R I K R L D E G G F F L T R R R I F	MKK3 MPI aa
192	W D D M K G D H V K H Y K I R K L D N G G Y Y I T T R A Q F	hFyn
191	W D E A K G D H V K H Y K I R K L D S G G Y Y I T T R A Q F	cYrk
194	F D N A K G L N V K H Y K I R K L D S G G F Y I T S R T Q F	hSrc
201	W D E I R G D N V K H Y K I R K L D N G G Y Y I T T R A Q F	hYes
187	W D Q T R G D H V K H Y K I R K L D M G G Y Y I T T R V Q F	hFgr
172	F D P V H G D V I K H Y K I R S L D N G G Y Y I S P R I T F	hLyn
166	Y D P R Q G D T V K H Y K I R T L D N G G F Y I S P R S T F	hHck
170	F D Q N Q G E V V K H Y K I R N L D N G G F Y I S P R I T F	hLck
161	I T T - Q G E V V K H Y K I R S L D N G G Y Y I S P R I T F	mBik

FIG.11B

184	S	T	L	N	E	F	V	S	H	Y	T	K	T	S	D	G	L	C	V	K	L	G	K	P	C	L	K	I	Q	V	MKK3	MPI	aa			
222	E	T	L	Q	Q	L	V	Q	H	Y	S	E	R	A	A	G	L	C	C	R	L	V	V	P	C	H	K	G	M	-	hFyn					
221	D	T	I	Q	Q	L	V	Q	H	Y	I	E	R	A	A	G	L	C	C	R	L	A	V	V	P	C	P	K	G	T	-	cYrk				
224	N	S	L	Q	Q	L	V	A	Y	S	K	H	A	D	G	L	C	H	R	L	T	T	V	C	P	T	S	K	-	hSrc						
231	D	T	L	Q	K	L	V	K	H	Y	T	E	H	A	D	G	L	C	H	K	L	T	T	V	C	P	T	V	K	-	hYes					
217	N	S	V	Q	E	L	V	Q	H	Y	M	E	V	N	D	G	L	C	N	L	L	I	A	P	C	T	I	M	K	-	hFgr					
202	P	C	I	S	D	M	I	K	H	Y	Q	K	Q	A	D	G	L	C	R	R	L	E	K	A	C	I	S	P	K	-	hLyn					
196	S	T	L	Q	E	L	V	D	H	Y	K	K	G	N	D	G	L	C	Q	K	L	S	V	P	C	M	S	S	K	-	hHck					
200	P	G	L	H	E	L	V	R	H	Y	T	N	A	S	D	G	L	C	T	R	L	S	R	P	C	Q	T	Q	K	-	hLck					
190	P	T	L	Q	A	L	V	Q	H	Y	S	K	K	G	D	G	L	C	Q	K	L	T	L	P	C	V	N	L	-	mB1k						
214	P	A	P	F	D	L	S	Y	K	T	V	D	Q	W	E	I	D	R	N	S	I	Q	L	L	K	R	L	G	S	G	MKK3	MPI	aa			
251	P	R	L	T	D	L	S	V	K	T	K	D	V	W	E	I	P	R	E	S	L	O	I	K	R	L	G	N	G	-	hFyn					
250	P	K	L	A	D	L	S	V	K	T	K	D	V	W	E	I	P	R	E	S	L	O	L	O	K	L	G	N	G	-	cYrk					
253	P	Q	T	Q	G	L	A	-	-	-	K	D	A	W	E	I	P	R	E	S	L	R	L	E	V	K	L	G	Q	G	-	hSrc				
260	P	Q	T	Q	G	L	A	-	-	-	K	D	A	W	E	I	P	R	E	S	L	R	L	E	V	K	L	G	Q	G	-	hYes				
246	P	Q	T	L	G	A	-	-	-	K	D	A	W	E	I	S	R	S	S	I	T	L	E	R	R	L	G	T	G	-	hFgr					
231	P	Q	-	-	-	K	P	W	D	K	D	A	W	E	I	P	R	E	S	I	K	L	V	K	R	L	G	A	G	-	hLyn					
225	P	Q	-	-	-	K	P	W	E	K	D	A	W	E	I	P	R	E	S	L	K	L	E	K	K	L	G	A	-	hHck						
229	P	Q	-	-	-	K	P	W	W	E	D	E	W	E	V	P	R	E	T	K	L	V	E	R	L	G	A	-	hLck							
219	P	K	-	-	-	N	L	W	A	Q	D	E	W	E	I	P	R	Q	S	L	K	V	R	K	L	G	S	G	-	mB1k						
244	Q	F	G	E	V	W	E	G	L	W	N	N	T	T	P	V	A	V	K	T	L	K	P	G	S	M	D	P	N	D	MKK3	MPI	aa			
281	Q	F	G	E	V	W	M	G	T	W	N	G	N	T	K	V	A	I	K	T	L	K	P	G	T	M	S	P	E	S	-	hFyn				
280	Q	F	G	E	V	W	M	G	T	W	N	G	T	T	K	V	A	V	K	T	L	K	P	G	T	M	S	P	E	A	-	cYrk				
280	C	F	G	E	V	W	M	G	T	W	N	G	T	T	R	V	A	I	K	T	L	K	P	G	T	M	S	P	E	A	-	hSrc				
287	C	F	G	E	V	W	M	G	T	W	N	G	T	T	K	V	A	I	K	T	L	K	P	G	T	M	M	P	E	A	-	hYES				
273	C	F	G	D	V	W	L	G	T	W	N	G	S	T	K	V	A	V	K	T	L	K	P	G	T	M	S	P	K	A	-	hFgr				
257	Q	F	G	E	V	W	M	G	Y	Y	N	N	S	T	K	V	A	V	K	T	L	K	P	G	T	M	S	V	Q	A	-	hLyn				
251	Q	F	G	E	V	W	M	A	T	Y	N	K	H	T	K	V	A	V	K	T	M	K	P	G	S	M	S	V	E	A	-	hHck				
255	Q	F	G	E	V	W	M	G	Y	Y	N	G	H	T	K	V	A	V	K	S	L	K	Q	G	S	M	S	P	D	A	-	hLck				
245	Q	F	G	E	V	W	M	G	Y	Y	K	N	N	M	K	V	A	T	K	L	K	E	G	T	M	S	P	E	A	-	mB1k					
274	F	L	R	E	A	Q	I	M	K	N	L	R	H	P	K	L	I	Q	L	Y	A	V	C	T	L	E	D	P	I	Y	MKK3	MPI	aa			
311	F	L	E	E	A	Q	I	M	K	K	L	K	H	D	K	L	V	Q	L	Y	A	V	V	S	-	E	E	P	I	Y	-	hFyn				
310	F	L	E	E	A	Q	I	M	K	R	L	R	H	D	K	L	V	Q	L	Y	A	V	V	S	-	E	E	P	I	Y	-	cYrk				
310	F	L	Q	E	A	Q	V	M	K	K	L	R	H	E	K	L	V	Q	L	Y	A	V	V	S	-	E	E	P	I	Y	-	hSrc				
317	F	L	Q	E	A	Q	I	M	K	K	L	R	H	D	K	L	V	P	Y	Q	L	Y	A	V	V	S	-	E	E	P	I	Y	-	hYes		
303	F	L	E	E	A	Q	V	M	K	L	L	R	H	D	K	L	V	Q	L	Y	A	V	V	S	-	E	E	P	I	Y	-	hFgr				
287	F	L	E	E	A	N	L	M	K	T	L	Q	H	D	K	L	V	R	Y	L	Y	A	V	V	T	-	E	E	P	I	Y	-	hLyn			
281	F	L	A	E	A	N	V	M	K	T	L	Q	H	D	K	L	V	K	L	H	A	V	V	T	K	E	-	P	I	Y	-	hHck				
285	F	L	A	E	A	N	L	M	K	Q	L	Q	H	Q	R	L	V	R	Y	L	Y	A	V	V	T	-	Q	E	P	I	Y	-	hLck			
275	F	L	G	E	A	N	V	M	K	T	L	Q	H	E	R	L	V	R	Y	L	Y	A	V	V	T	R	E	-	P	I	Y	-	mB1k			

FIG.11C

21/26

304	I	I	T	E	L	M	R	R	H	G	S	L	Q	E	Y	L	Q	N	D	T	G	S	K	I	H	L	T	Q	Q	V	D		MKK3 MPI aa
340	I	V	T	E	Y	M	N	K	G	S	L	L	D	F	L	K	D	G	E	G	R	A	L	K	P	N	L	V	D		hFyn		
339	I	V	T	E	F	M	S	Q	G	S	L	L	D	F	L	K	D	D	G	R	Y	L	R	L	P	Q	L	V	D		cYrk		
339	I	V	T	E	Y	M	S	K	G	S	L	L	D	F	L	K	G	E	T	G	K	Y	L	R	L	P	Q	L	V	D		hSrc	
346	I	V	T	E	F	M	S	K	G	S	L	L	D	F	L	K	E	D	G	K	Y	L	K	L	P	Q	L	V	D		hYes		
332	I	V	T	E	F	M	C	H	G	S	L	L	D	F	L	K	N	P	E	G	Q	D	L	R	L	P	Q	L	V	D		hFgr	
317	I	I	T	E	Y	M	A	K	G	S	L	L	D	F	L	K	S	D	E	G	G	K	V	L	L	P	K	L	I	D		hLyn	
310	I	I	T	E	F	M	A	K	G	S	L	L	D	F	L	K	S	D	E	G	S	K	Q	P	L	P	K	L	I	D		hHck	
314	I	I	T	E	Y	M	E	N	G	S	L	V	O	F	L	K	T	P	S	G	I	K	L	T	I	N	K	L	I	D		hLck	
304	I	V	T	E	Y	M	A	R	G	C	L	L	D	F	L	K	T	D	E	G	S	R	L	S	L	P	R	L	I	D		mBtk	
334	M	A	A	Q	V	A	S	G	M	A	Y	L	E	S	R	N	Y	I	H	R	D	L	A	A	R	N	V	L	V	G		MKK3 MPI aa	
370	M	A	A	Q	V	A	A	G	M	A	Y	I	E	R	M	N	U	I	H	R	D	L	R	S	A	N	I	L	V	G		hFyn	
369	M	A	A	Q	I	A	A	G	M	A	Y	I	E	R	M	N	Y	I	H	R	D	L	R	A	A	N	I	L	V	G		cYrk	
369	M	A	A	Q	I	A	S	G	M	A	Y	V	E	R	M	N	Y	V	H	R	D	L	R	A	A	N	I	L	V	G		hSrc	
376	M	A	A	Q	I	A	D	G	M	A	Y	I	E	R	M	N	Y	I	H	R	D	L	R	A	A	N	I	L	V	G		hYes	
362	M	A	A	Q	V	A	E	G	M	A	Y	M	E	R	M	N	Y	I	H	R	D	L	R	A	A	N	I	L	V	G		hFgr	
347	F	S	A	Q	I	A	E	G	M	A	Y	M	E	R	K	N	Y	I	H	R	D	L	R	A	A	N	V	L	V	S		hLyn	
340	F	S	A	Q	I	A	E	G	M	A	F	I	E	Q	R	N	Y	I	H	R	D	L	R	A	A	N	I	L	V	S		hHck	
344	M	A	A	Q	I	A	E	G	M	A	F	I	E	E	R	N	Y	I	H	R	D	L	R	A	A	N	I	L	V	S		hLck	
334	M	S	A	Q	V	A	E	G	M	A	Y	I	E	R	M	N	S	I	H	R	D	L	R	A	A	N	I	L	V	S		mBtk	
364	E	H	N	I	Y	K	V	A	D	F	G	L	A	R	V	F	K	V	D	N	E	I	Y	E	S	R	H	E	I		MKK3 MPI aa		
400	N	G	L	I	C	K	I	A	D	F	G	L	A	R	L	I	---	---	ED	N	E	Y	T	A	R	Q	G	A		hFyn			
399	D	N	L	V	C	K	I	A	D	F	G	L	A	R	L	I	---	---	ED	N	E	Y	T	A	R	Q	G	A		cYrk			
399	E	N	L	V	C	K	V	A	D	F	G	L	A	R	L	I	---	---	ED	N	E	Y	T	A	R	Q	G	A		hSrc			
406	E	N	L	V	C	K	I	A	D	F	G	L	A	R	L	I	---	---	ED	N	E	Y	T	A	R	Q	G	A		hYes			
392	E	R	L	A	C	K	I	A	D	F	G	L	A	R	L	I	---	---	K	D	E	Y	N	P	C	Q	S		hFgr				
377	E	S	L	M	C	K	I	A	D	F	G	L	A	R	V	I	---	---	ED	N	E	Y	T	A	R	E	G	A		hLyn			
370	A	S	L	V	C	K	I	A	D	F	G	L	A	R	V	I	---	---	ED	N	E	Y	T	A	R	E	G	A		hHck			
374	D	T	L	S	C	K	I	A	D	F	G	L	A	R	L	I	---	---	ED	N	E	Y	T	A	R	E	G	A		hLck			
364	E	T	L	C	C	K	I	A	D	F	G	L	A	R	T	I	---	---	D	S	E	Y	T	A	Q	E	G	A		mBtk			
394	K	L	P	V	K	W	T	A	P	E	A	I	R	S	N	K	F	S	I	K	S	D	V	W	S	F	G	I	L	L		MKK3 MPI aa	
427	K	F	P	I	K	W	T	A	P	E	A	Y	G	R	F	T	I	K	S	D	V	W	S	F	G	I	L	L		hFyn			
426	K	F	P	I	K	W	T	A	P	E	A	Y	G	R	F	K	T	I	K	S	D	V	W	S	F	G	I	L	L		cYrk		
426	K	F	P	I	K	W	T	A	P	E	A	Y	G	R	F	T	I	K	S	D	V	W	S	F	G	I	L	L		hSrc			
433	K	F	P	I	K	W	T	A	P	E	A	Y	G	R	F	T	I	K	S	D	V	W	S	F	G	I	L	Q		hYes			
419	K	F	P	I	K	W	T	A	P	E	A	Y	G	R	F	T	I	K	S	D	V	W	S	F	G	I	L	L		hFgr			
404	K	F	P	I	K	W	T	A	P	E	A	Y	G	T	F	T	I	K	S	D	V	W	S	F	G	I	L	L		hLyn			
397	K	F	P	I	K	W	T	A	P	E	A	Y	G	T	F	T	I	K	S	D	V	W	S	F	G	I	L	L		hHck			
401	K	F	P	I	K	W	T	A	P	E	A	Y	G	T	F	T	I	K	S	D	V	W	S	F	G	I	L	L		hLck			
390	K	F	P	I	K	W	T	A	P	E	A	Y	G	T	F	T	I	K	A	D	V	W	S	F	G	V	L	L		mBtk			

FIG.11D

424	Y E I I T Y G K M P Y S G M T G A Q V I Q M L A Q N Y R L P	MKK3 MPI aa
457	TEL V T K G R V P Y P G M N N R E V L E Q V E R G Y R M P	hFyn
456	TEL V T K G R V P Y P G M N N R E V L E Q V E R G Y R M O	cYrk
456	TEL T T K G R V P Y P G M V N R E V L D Q V E R G Y R M P	hSrc
463	TEL V T K G R V P Y P G M V N R E V L E Q V E R G Y R M P	hYes
449	TEL I T K G R I P Y P G M N K R E V L E Q V E Q G Y H M P	hFgr
434	Y E I I V T Y G K I P Y P G R T N A D V M T A L S Q G Y R M P	hLyn
427	M E I I V T Y G R I P Y P G M S N P E V I R A L E R G Y R M P	hHck
431	T E I I V T H G R I P Y P G M T N P E V I Q N L E R G Y R M V	hLck
420	M V I I V T Y G R V P Y P G M S N P E V I R S L E H G Y R M P	mBlk
454	Q P S N C P Q Q F Y N - I M L E C W N A E P K E R P T F E T	MKK3 MPI aa
487	C P Q D C P I S L H - E L M I H C W K K D P E E R P T F E Y	hFyn
486	C P G G C P P S L H - D V M V Q C W K R E P E E R P T F E Y	cYrk
486	C P P E C P E S L H - D L M C Q C W R K E P E E R P T F E Y	hSrc
493	C P Q G C P E S L H - E L M N L C W K K D P D E R P T F E Y	hYes
479	C P P G C P A S L Y - E A M E Q T W R L D P E E R P T F E Y	hFgr
464	R V E N C P D E L Y - D I M K M C W K E K A E E R P T F D Y	hLyn
457	R P E N C P E E L Y - N I M M R C W K N R P E E R P T F E Y	hHck
461	R P D N C P E E L Y - Q L M R L C W K E R P E D R P T F D Y	hLck
450	C P E T C P P E L Y N D I I T E C W R G R P E E R P T F E F	mBlk
483	L R W K L E D Y F E - T D S S Y S D A N N F I R	MKK3 MPI aa
516	L Q S F L E D Y F T A T E P Q Y Q P G E N - - - L	hFyn
515	L Q S F L E D Y F T A T E P Q Y Q P G D N - - - Q	cYrk
515	L Q A F L E D Y F T S T E P Q Y Q P G E N - - - L	hSrc
522	I Q S F L E D Y F T A T E P Q Y Q P G E N - - - L	hYes
508	L Q S F L E D Y F T S A E P Q Y Q P G D Q - - - T	hFgr
493	L Q S V L D D F Y T A T E G Q Y Q Q - - Q - - P	hLyn
486	I Q S V L D D F Y T A T E S Q Y Q Q - - Q - - P	hHck
490	L R S V L E D F F T A T E G Q Y Q P - - Q - - P	hLck
480	L Q S V L E D F Y T A T E G Q Y E L - - Q - - P	mBlk

FIG.11E

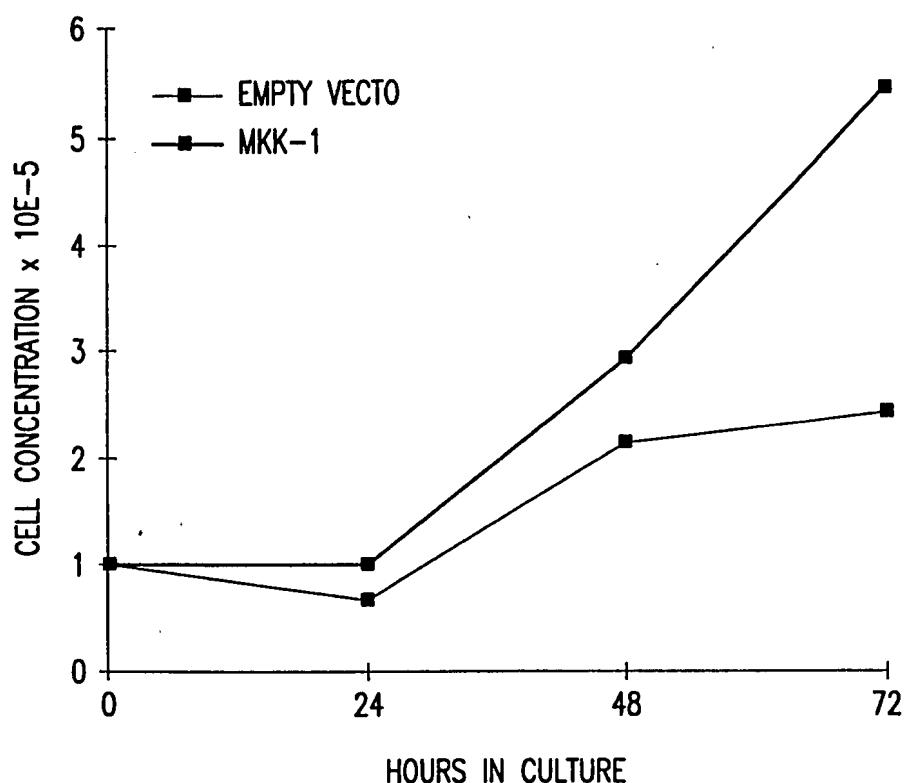


FIG.12

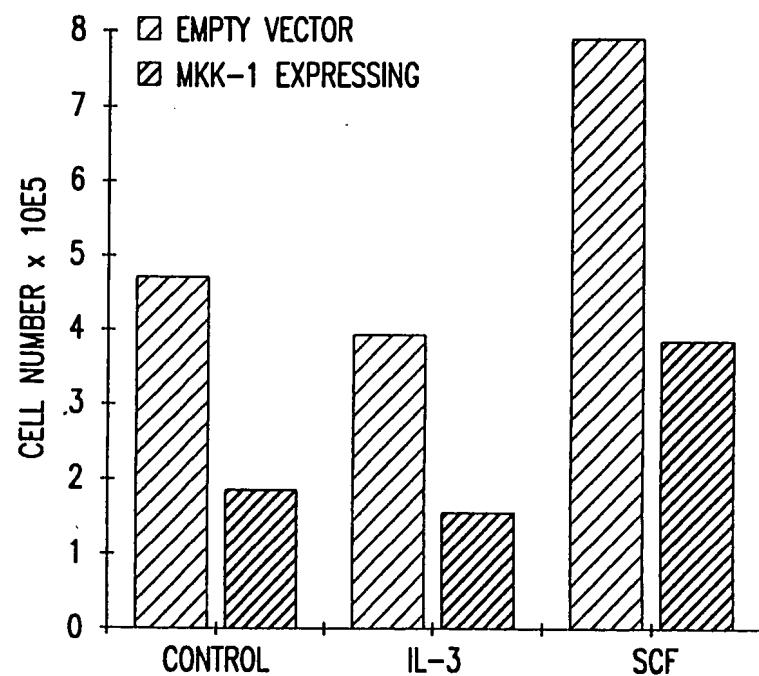


FIG.13

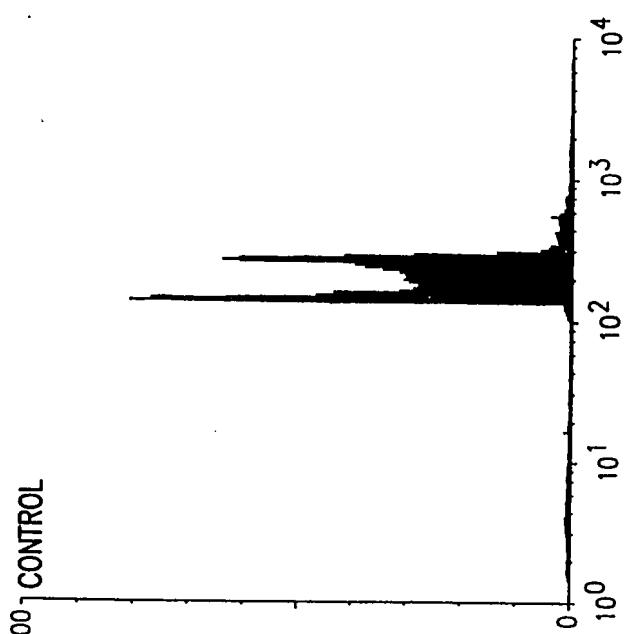
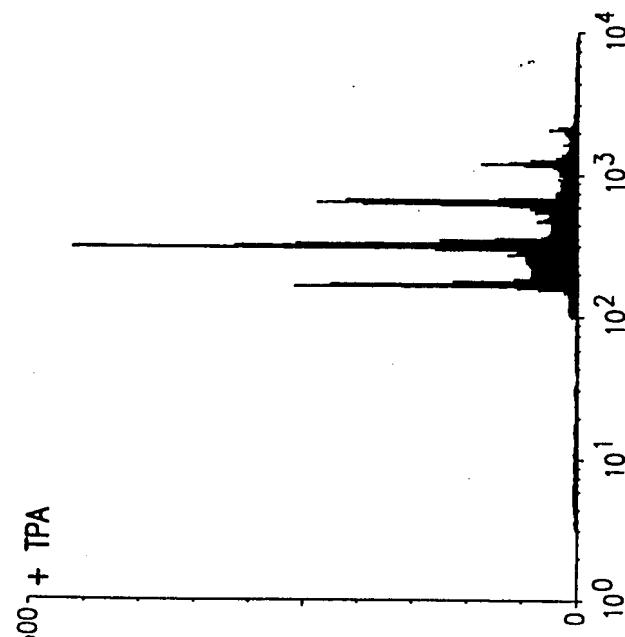


FIG. 14B

FIG. 14A

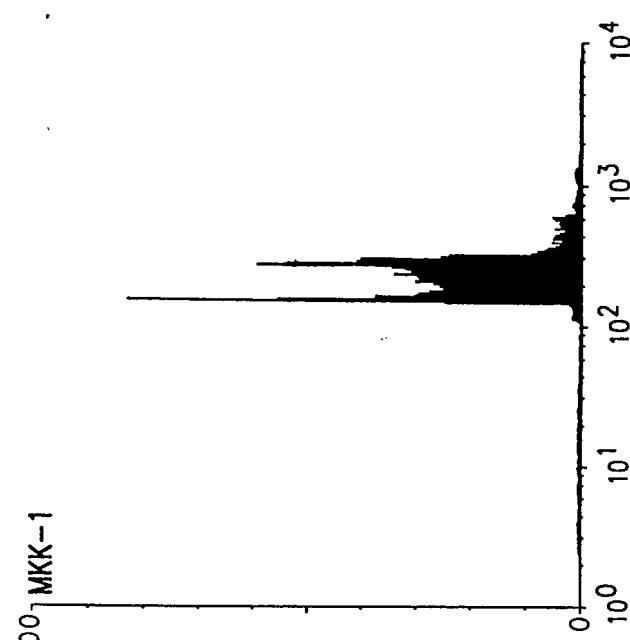
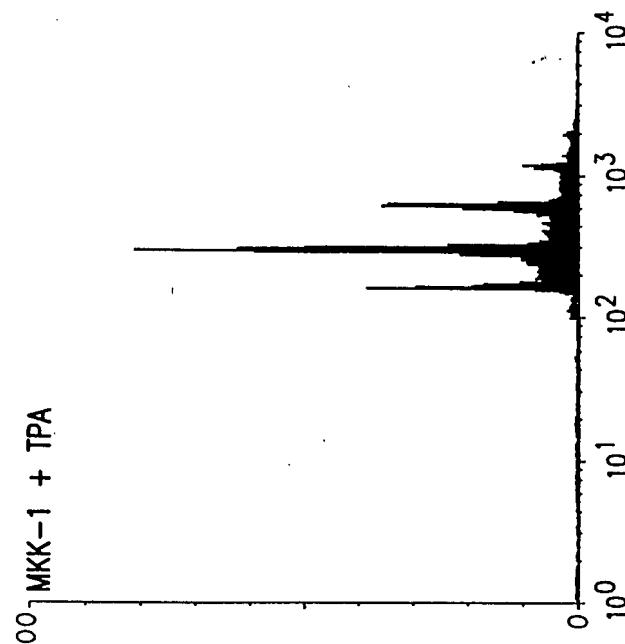


FIG. 14D

FIG. 14C